DEPARTMENT OF THE ARMY
OFFICE OF THE SURGEON GENERAL
5109 LEESBURG PIKE
FALLS CHURCH, VA 22041-3258

REPLY TO
ATTENTION OF

DASG-PPM-NC (40)

18 JUL 2001

MEMORANDUM FOR

Commanders, Regional Medical Commands
Commander, 18th MEDCOM

SUBJECT: Army Acute Respiratory Disease Surveillance Program

1. The Army Acute Respiratory Disease (ARD) Surveillance Program is forwarded for implementation. While the ARD Surveillance System is formally implemented only at Basic Combat Training posts, the information contained in this document is of value to preventive medicine, primary care, and laboratory personnel assigned to stations worldwide.

2. ARD surveillance will remain of particularly high importance in the absence of adenovirus vaccine. We can expect the ARD rate to approach or exceed historical levels and the Strep-ARD Surveillance Index to exceed, under certain circumstances, its threshold in the absence of virulent strep. These thresholds may require temporary adjustment. Preventive Medicine Officers should understand the forces beneath the indices when contemplating control measures.

3. POC is COL Withers, OTSG, DSN 761-3160, commercial (703)681-3160, or <ben.withers@amedd.army.mil>.

FOR THE SURGEON GENERAL:

Encl

LESTER MARTINEZ-LOPEZ
Brigadier General, MC
Functional Proponent for
Preventive Medicine

CF (w/encl):
Commander, U.S. Army Training and Doctrine Command, ATTN: Surgeon, 7 Fenwick Road, Fort Monroe, VA 23651-5000
Commander, U.S. Army Forces Command, ATTN: Surgeon, Fort McPherson, GA 30330-6000
Commander, U.S. Army Materiel Command, ATTN: Surgeon, 5001 Eisenhower Avenue, Alexandria, VA 22333-0001
Commander, U.S. Army Test & Evaluation Command, Park Center IV, 4501 Ford Avenue, Alexandria, VA 22301-1458
Commander, US Army Special Operations Command, ATTN: Surgeon, Fort Bragg, NC 28307-5200
Director, National Guard Bureau, ATTN: NGB-ARS (Surgeon), 111 South George Mason Arlington, VA 22204-1382
Commander, U.S. Army Reserve Command, ATTN: Surgeon, 1401 Deshler Street South West, Fort McPherson, GA 30330-2000

Army Acute Respiratory Disease (ARD) Surveillance Program

1 July 01

1. References.

a. AR 40-5, Preventive Medicine, 15 Oct 90.

b. AR 40-562, Immunizations and Chemoprophylaxis, 1 Nov 95.

c. Memorandum, HQDA, SGPS-PSP, 19 Apr 94, Subject: Implementation of New Medical Surveillance System.

d. Memorandum, MEDCOM, MCHO-CL-W, 21 Jan 00, Subject: Adenovirus Disease Control.

e. Memorandum, MEDCOM, MCHO-CL-W, 25 Jan 95, Subject: Acute Respiratory Disease (ARD) and Adenovirus Surveillance Programs.

f. Memorandum, HQDA, DASG-HS-PM, 13 Jan 00, Subject: Adenovirus Vaccine and Disease Control.

2. General.

a. This document provides guidelines and requirements for the Army Acute Respiratory Disease (ARD) Surveillance Program and replaces reference 1e. Objectives of this program include collection and dissemination of timely and accurate installation-specific information concerning ARD using the ARD Surveillance System, and early identification of outbreaks. While the ARD Surveillance System is formally implemented only at installations conducting Basic Combat Training (BCT), the information contained in this document is of value to preventive medicine, primary care, and laboratory personnel assigned to stations throughout the world.

b. ARD is a leading cause of morbidity in the military. Large outbreaks of rheumatic fever, meningococcal disease, adenovirus infection, and other respiratory diseases in the past demonstrate the susceptibility of the military population to explosive outbreaks with significant morbidity. In the past few years, outbreaks of ARD have been observed at various Army installations. Although no outbreaks of Acute Rheumatic Fever (ARF) have occurred recently, there is concern that cases of ARF could recur in the seasons ahead. Other causes of ARD have the

potential to cause outbreaks of disease when host, agent, and environmental factors combine to provide the opportunity. The use of vaccines against influenza, meningococcus, and adenovirus has had remarkable success in curbing both the frequency and size of ARD outbreaks. Nonetheless, certain segments of the military population (e.g., basic trainees) remain at considerable risk. Trainees are given vaccinations against influenza, measles, rubella, and meningococcal serogroups A, C, Y, and W135. Bicillin prophylaxis is also administered to trainees at some installations to prevent Group A, beta-hemolytic streptococcal (GABHS) disease. The adenovirus vaccine supply lapsed in 1999 and a new vaccine will not be available for several years. ARD due to adenovirus has increased significantly. Therefore, efforts to identify, define, and control these outbreaks must continue to receive emphasis.

c. Routine surveillance of ARD among basic trainees has been conducted since 1967. In the past, ARD surveillance was based on hospitalizations, since all trainees with fever and respiratory symptoms were hospitalized. Recently, trainees with uncomplicated febrile ARD have been removed from training and managed in self-care settings (e.g., special barracks) or returned to the unit with limited duty profiles. This change in practice must be taken into consideration as ARD surveillance is performed.

3. Definition of ARD.

a. For surveillance purposes, an ARD case is defined as a trainee with all of the following:

(1) Oral temperature $\geq$ 100.5 F.

(2) Recent onset of at least one sign or symptom of acute respiratory tract inflammation (e.g., sore throat, cough, runny nose, chest pain, shortness of breath, headache, generalized muscle aches).

(3) Given a limited duty profile by the examining physician (to include limitations on physical fitness training) or removed from duty (e.g., hospital, self-care ward) for at least 8 hours.

This definition is intended as a guide for case identification and reporting and should not be construed as strict criteria for

admission to a military treatment facility (MTF). Epidemiology and Disease Control personnel assigned to Preventive Medicine Services who submit information to the ARD Surveillance System should count only those cases that satisfy this surveillance definition.

b. Installations that conduct BCT or whose activities may otherwise enhance the spread of ARD (e.g., installations with Advanced Individual Training [AIT]) must assess the effect of local admission policies and procedures on disease control efforts. In general, year-round use of the above definition of ARD as an admission standard is adequate for disease control practices. A more liberal admission criteria may be appropriate during periods of increased or high disease incidence.

4. ARD Surveillance at BCT Installations.

a. Case identification. ARD cases (defined in paragraph 3a) will be identified among both hospitalized and non-hospitalized trainees. For completeness and comparability, it is critical that populations and cases (in-patient and out-patient) be counted similarly at all BCT installations.

b. In-Patient Surveillance.

(1) Cases of ARD among admitted trainees should be identified by reviewing daily admission logs. While paragraph 3a lists criteria that clinical personnel could follow for admitting trainees, Preventive Medicine personnel must search for a range of diagnoses in identifying admitted cases of disease attributable to ARD. Most uncomplicated cases of ARD are easily recognized on the daily admission log by any of the following or similarly classified conditions. Many other diagnoses, some of which are included below, are closely related to ARD and should also be included as cases of ARD. [ICD-9 codes are provided.] If there is any question, the Preventive Medicine Officer should be consulted.

-Acute Nasopharyngitis [common cold]	[460]
-Acute Pharyngitis	[462]
-Acute Respiratory Disease	[460-465]
-Acute Viral Syndrome/Illness	[465]
-Bronchitis	[466]
-Chickenpox (varicella)	[052]
-Influenza	[487]

-Mononucleosis	[075]
-Mycoplasma	[041.81]
-Otitis Media	[381-382]
-Peritonsillar Abscess	[475]
-Pneumonia	[480-486]
-Sinusitis	[461]
-Streptococcal Pharyngitis	[034]
-Tonsillitis	[463]
-Upper Respiratory Infection	[465]

(2) Each week, local PM personnel will make a roster of trainees admitted with any of the above conditions. A Trainee ARD Admissions Worksheet is included as Appendix D for this purpose. Unit and admitting diagnosis should be annotated to facilitate current or retrospective review. Collecting information in this manner will facilitate completion of the weekly ARD Surveillance Report (Appendix C).

c. Out-Patient Surveillance. The recent trend towards non-hospitalization makes accurate, comparable, out-patient surveillance more difficult, as many trainees with ARD are no longer "hospitalized." Many MEDDACs at BCT Installations have created outpatient infirmaries or self-care wards. In this document, the term "out-patient" refers to all ARD patients who are not officially admitted as in-patients. Due to difference between BCT units and MEDDACs, out-patient surveillance systems will vary, yet the principles are constant. Each BCT installation PMO should carefully design and closely supervise the out-patient surveillance system, heeding the following factors, *to ensure quality and completeness*:

-strict adherence to ARD case definition (para 3a)
-education of medical staff
-coordination with TMC/medical staff
-capture patients on the "out-patient wards"
-capture lab data
-capture profile data, at unit or TMC/ER
-maximum use of ADS/CHCS data

d. Surveillance procedures. Streptococcal disease and rheumatic fever are historically important in military training camps; there is significant concern that such outbreaks could occur. Empirical evidence shows that the detection of increasing streptococcal disease trends, followed by the implementation of effective control strategies reduces or

prevents the occurrence of ARF. Routine tracking of indicators of streptococcal disease activity (Appendix A) is likely to identify populations at risk and provide a basis for prompt intervention. The Strep Recovery Rate and the Streptococcal-ARD Surveillance Index (SASI) must be calculated weekly for the trainee population. Diagnosis of respiratory disease secondary to streptococcal infections will be based upon isolation of GABHS organisms in culture. Isolation of a single colony of GABHS is adequate for diagnosis. The Streptococcal-ARD Surveillance and Control Plan (Appendix B) indicates appropriate response to the diagnosis of ARF or an elevated SASI.

e. Preventive Medicine Services will monitor sick call at troop medical clinics for trends in ARD. Upward ARD trends should be promptly investigated to determine the extent and nature of respiratory morbidity.

f. Outbreaks.

(1) Definition of ARD outbreak. The surveillance definition of an ARD outbreak will be a rate > 1.5 percent of the population under surveillance per week for 2 weeks. This rate is calculated as the number of trainees with ARD (x 100) divided by the total number of trainees. (ARD is defined in paragraph 3a.)

(2) Outbreak identification/investigation. The number of ARD cases required to exceed the outbreak threshold (i.e., total number of trainees x 0.015) should be calculated locally at the beginning of each week. On a daily basis, the cumulative number of ARD cases for the week should be compared to the calculated number that defines an outbreak. As soon as the threshold number of cases has been exceeded, an outbreak investigation will be initiated. The Chief of Preventive Medicine will coordinate with local laboratory officers to obtain services provided by MEDCEN laboratories. This coordination should include: identification of MEDCOM POCs, stockpiling of testing materials, procedures for collecting and shipping samples, and mechanisms for obtaining test results.

5. ARD Surveillance Reporting Procedures at BCT Installations.

a. Weekly reports of the incidence of ARD in BCT populations will be sent to the ARD Surveillance System maintained by the Army Medical Surveillance Activity (AMSA), United States Army

Center for Health Promotion and Preventive Medicine (USACHPPM). Reports will include the following data elements for each company sized unit: unit designation, week of training, type of training, barracks type, number of males/females assigned, number of male/female ARD cases, number of streptococcal cultures performed on male/female ARD cases, and the number of GABHS isolates from cultures performed on male/female ARD cases. To aid in the collection of this information, an Acute Respiratory Disease Surveillance Report (ARDSR) Form is included (App C).

b. Preventive Medicine Chiefs at BCT installations will submit the ARDSR on a weekly basis, by COB Wednesday of the following week. This information may be submitted to AMSA via e-mail to dmss@amsa.army.mil or faxed to DSN 662-0612 or commercial (202) 782-0612.

c. AMSA will consolidate and analyze the ARDSR. Copies of the consolidated weekly report will be distributed to the Proponency Office for Preventive Medicine (POPM), appropriate Regional Medical Command (RMC), the United States Army Training and Doctrine Command (TRADOC) Surgeon, and the Chief of Preventive Medicine at each ARD reporting site.

d. All occurrences of ARF and meningococcal disease will be immediately reported to AMSA through the Reportable Medical Events System (RMES). Additionally, any outbreaks of ARD must be telephonically reported to the Reportable Medical Events Project Officer at DSN 662-0471 or commercial (202) 782-0471.

6. ARD Surveillance of Groups Other than Basic Trainees.

a. ARD is not a problem unique to basic trainees. BCT graduates may bring ARD to AIT installations. Other populations at TRADOC installations, to include cadre, other permanent party personnel, and family members, should be indirectly monitored for any unusual illnesses. Non-TRADOC installations are also at risk for ARD outbreaks, especially if environmental factors facilitate the spread of respiratory pathogens. Assessment of respiratory disease activity, perhaps limited to sentinel populations (e.g., pediatric clinics or at certain troop medical clinics), should be a routine part of local preventive medicine surveillance activities. In the event of a suspected or confirmed outbreak, an investigation should be initiated and appropriate specimens collected.

b. Absenteeism is probably the best indirect indicator of an influenza outbreak. School and workplace absenteeism as well as MTF visits for febrile respiratory disease should be followed, particularly during the fall, winter, and spring seasons. Surveillance efforts should be coordinated with local school authorities, commanders, occupational health clinics, and civilian personnel offices.

c. Since Army populations interact with other military and civilian communities, all surveillance efforts should be performed with some understanding of the incidence of disease in communities surrounding Army installations. Coordination with medical authorities from other services and local civilian health authorities is encouraged.

7. ARD Surveillance Overseas.

a. In Europe, ARD surveillance should be conducted under guidance from the European RMC Preventive Medicine Officer, who will coordinate support with Landstuhl Regional Medical Center and CHPPM-Europe.

b. In the Far East, ARD surveillance is also indicated. The 18th MEDCOM Preventive Medicine Officer should coordinate with CHPPM-Pacific and Tripler Army Medical Center to establish a plan of support.

c. Due to physical distances, it may be more feasible in an outbreak situation to send specimens to area diagnostic laboratories of other services. Prior coordination with representatives of other services is essential to determine availability of support.

8. Outbreak Investigations.

a. All ARD outbreaks will be investigated. The installation Preventive Medicine Service Chief will determine the nature and scope of the investigation. A physician will be a part of the investigation team. A report will be submitted through the appropriate RMC to the POPM, with copies to AMSA and USACHPPM, following completion of the investigation.

b. The investigation team leader will inform the commanders of the affected units of the occurrence of the outbreak, the

need for the investigation, the findings of the investigation, implications of the findings, and recommendations for interdiction or prevention.

c. In the event that local capabilities are insufficient to conduct an appropriate investigation, the Chief of Preventive Medicine will contact the Regional Preventive Medicine Service for additional assistance. If necessary, an Epidemiological Consultation (EPICON) can be requested, through POPM, from the Directorate of Epidemiology and Disease Surveillance (DEDS), USACHPPM.

9. Points of contact for this program are the Preventive Medicine Staff Officer, OTSG (DSN 761-3160), the Disease and Injury Control Program Manager, USACHPPM (DSN 584-2714), and the Reportable Medical Events Project Officer, Army Medical Surveillance Activity, (DSN 662-0812).

Appendices
A Indicators of Streptococcal Disease Activity
B Streptococcal-ARD Surveillance and Control Plan
C ARD Surveillance Report
D Trainee ARD Admissions Worksheet

APPENDIX A

INDICATORS OF STREPTOCOCCAL DISEASE ACTIVITY

THROAT CULTURE-BASED INDICES

Name of Index	Formula	Comments
Strep Recovery Rate	$\frac{\text{Pos Strep cultures among ARD cases} \times 100}{\text{Total cultures among ARD cases}}$	Calculate on a weekly basis. Observe over time for trends. (Only positive throat cultures from trainees meeting the case definition are used in this calculation.)
Strep-ARD Surveillance (SAS) Index	$\text{Strep Recovery Rate} \times \frac{\text{(ARD Cases)} \times 100}{\text{\# Trainees)}}$	Calculate on a weekly basis. If > 25 for 2 consecutive weeks, indicates significant streptococcal disease activity.

SUPPURATIVE COMPLICATIONS OF STREPTOCOCCAL INFECTIONS

Complications	Comments
Peritonsillar abscess Paranasal sinusitis Otitis media Mastoiditis Suppurative adenitis Suppurative thrombophlebitis Metastases to joints or bones Meningitis Pneumonia	Monitor these events through admission/ discharge diagnoses, ER logs, or through regular correspondence with appropriate clinical services. A marked increase in any of these events may be a sensitive, early indicator of an incipient rheumatic fever outbreak.

APPENDIX B

STREPTOCOCCAL-ARD SURVEILLANCE AND CONTROL PLAN

Definition	Phase I	Phase II	Phase III	Phase IV
Based on the Streptococcal-ARD Surveillance Index (SASI) and occurrence of cases of Acute Rheumatic Fever (ARF)	SASI not > 25 for 2 or more consecutive weeks AND No cases of ARF	SASI > 25 for 2 or more consecutive weeks OR One case of ARF	Two or more cases of ARF	Occurrence of cases of ARF despite bicillin prophylaxis

Control	Phase I	Phase II	Phase III	Phase IV
See Key Below	1	1 and 2	1 and 2	1, 2, and 3

1. Perform throat cultures on all symptomatic patients and administer IM bicillin* to those with cultures positive for GABHS.
2. Administer bicillin* to cadre and current trainees and to all new trainees as they enter the Reception Station.
3. Administer a second dose of bicillin* to all trainees 4 weeks after the first.

* unless contraindicated by allergy

APPENDIX C

ACUTE RESPIRATORY DISEASE SURVEILLANCE REPORT

TO Army Medical Surveillance Activity Bldg T-20, Room 213 (MCHB-TS-EDM) 6900 Georgia Ave. NW Washington, DC 20307-5001	FROM:	Week ending date:	Date submitted:

UNIT DESIGNATION			WEEK OF TRAINING	TYPE OF TRAINING	TYPE OF BARRACKS	MALE TRAINEES				FEMALE TRAINEES			
Company	Bn	Bde				Unit Strength	ARD Cases	Culture Done	Cultures GABHS+	Unit Strength	ARD Cases	Culture Done	Cultures GABHS+

*Week Ending Date
The date of the last day of the week of the report (i.e. Saturday).

Week of Training
PRE - in Reception Station
00 - assigned to unit, not yet training
01-14 - Actual training week

§Type of Training
BCT: Basic Combat Training
AIT: Advanced Individual Training
OSUT: One-Stop Unit Training (BCT+AIT)

Barracks Type
3SB: 3-story brick barracks
3BM: 3-story block, mess hall attached
3NM: 3-story block, no mess hall attached
2NM: 2-story block, no mess hall attached
1 NM: 1-story block, no mess hall attached
SSP: Modern, concrete "starship" type
WW2: Wooden, World War II vintage

TYPED NAME, GRADE, AND TITLE OF REPORTING AGENT	TELEPHONE:

TRAINEE ARD ADMISSIONS WORKSHEET

Week Ending: _____

	Name	Last 4	Date Admitted	Diagnosis	Unit	Cult Done	Cult Pos
1.							
2.							
3.							
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